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EXAMINER	
RAHMJOO, MANUCHER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/573,843	MARUGAME, ATSUSHI	
	Examiner	Art Unit	
	MIKE RAHMJOO	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15- 31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15,17-22,24-29 and 31* is/are rejected.

7)☒ Claim(s) *16,23,30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/29/06,6/12/06,2/20/07,2/5/08,6/2/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 15- 21 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent[1] and recent Federal Circuit decisions[2] indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example the method of data matching (i.e., claim 15) including a configuration component accumulation step, a connecting step, a state change data generation step and a matching step is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, manually or without a machine. The Applicant has provided no explicit and deliberate definitions of a configuration component accumulation step, a connecting step, a state change data generation step and a matching step to limit the steps to the electronic/computer

implemented form of the" data matching" and the claim language itself is sufficiently broad to read on said method as being implemented mentally, manually or without a machine.

1 Diamond v. Diehr, 450 U.S. 175, 184 (1981); *Parker v. Flook,* 437 U.S. 584, 588 n.9 (1978); *Gottschalk v.*

Benson, 409 U.S. 63, 70 (1972); *Cochrane v. Deener,* 94 U.S. 780, 787-88 (1876).

2 *In re Bilski,* 88 USPQ2d 1385 (Fed. Cir. 2008).

Claims 15- 21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 15 recites a configuration component accumulation step, a connecting step, a state change data generation step and a matching step which does not impart functionality to a computer or computing device, and is thus considered nonfunctional descriptive material. Such nonfunctional descriptive material, in the absence of a functional interrelationship with a computer, does not constitute a statutory process, machine, manufacture or composition of matter and is thus non-statutory per se.

Claims 15- 21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 15 defines a computer program product embodied on a computer readable medium and embodying functional descriptive material. However, the specification (i.e., paragraphs 108 and 110) defines said computer readable medium as “recording medium” and does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e.,

"When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed computer program product can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 19- 22, 24, 26- 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Blanz et al (US Patent 6556196), hereinafter, Blanz.

As per clams 15,22 and 29, Blanz teaches a computer program product embodied on a computer-readable medium and comprising code (i.e., image processing system 10 of fig. 8);

Blanz broadly teaches a configuration component accumulating unit (i.e., system 10 and processor 30 of fig. 8) and step accumulating a configuration component

generated by decomposing a measuring quantity of an object by a predetermined method and a plurality of states of said object each of which is corresponding to said configuration component; a connecting unit (i.e., system 10 and input circuit 40 of fig. 8) and step making a connection of a parameter corresponding to said configuration component at a first state of said plurality of states with a parameter corresponding to said configuration component at a second state of said plurality of states; a state change data generating unit (i.e., system 10 and units 60, 70 and or 80 of fig. 8) and step generating a state change data which is a data at said second state by using a data of a matching target object of said first state and said connection; and a matching unit (i.e., system 10 and object analyzer 50 of fig. 8) and step matching said state change data and a previously accumulated matching data; figures 1- 7 and column 11 lines 55- 67 through column 12 lines 1- 10 of Blanz teaches starting from an arbitrary face as the temporary reference, preliminary correspondence between all other faces (implicitly corresponding decomposing a measuring quantity and to the plurality of states)and this reference is computed using the optic flow algorithm. On the basis of these correspondences, shape and the texture vectors S and T can be computed (i.e., connection step of correspondences between states). Their average serves as a new reference face. The first morphable model is then formed (corresponding to the generation of state change) by the most significant components (corresponding to the connection of parameters as pointed above) as provided by a standard PCA decomposition (corresponding to decomposing a measure of quantity as pointed above) The current morphable model is now matched (corresponding to the matching

of the state change data) to each of the 3D faces according to the method described in Section III (corresponding to a predetermined method).1. Then, the optic flow algorithm computes correspondence between the 3D face and the approximation provided by the morphable model. Combined with the correspondence implied by the matched model, this defines a new correspondence between the reference face and the example. Iterating this procedure with increasing expressive power of the model (by increasing the number of principal components) leads to reliable correspondences between the reference face and the examples, and finally to a complete morphable face model.

Examiner's note; examiner interprets morphing as a change or transition (i.e., corresponding to applicant's claimed conversion) of one image into another.

As per claims 17 and 24 said predetermined method is a principal component analysis see column 6 line 10.

As per claims 19 and 26 the data of said matching target is a biometrics data (i.e., matching the 3D scan of faces) see column 4 line 66.

As per claims 20 and 27 each of said plurality of states corresponds to a state at a different time during a course of aging see column 13 lines 58- 59.

As per claims 21 and 28 said measuring quantity is an image of a face see figures 1- 7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 18, 25 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanz in view of Toyama (US Patent 6937744).

As per claims 18, 25 and 31 and in light of the rejection made, Blanz does not teach conversion setup through a learning in the connecting and state change data generating steps Blanz teaches morphing (corresponding to conversion) see figures 1-7 and column 11 lines 55- 67 through column 12 lines 1- 10.

However, Toyama teaches conversion (i.e., morphing) setup through a learning in the connecting and state change data generating steps (i.e., learning in column 11 lines 25- 45, column 15 lines 15- 67 through columnn16 lines 1- 5 and claim 10).

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings of Toyama into Blanz to provide learning function which automatically learns and outputs the object model using a combination of the state estimates generated by the initial contour-based tracking function and the observations generated by the data acquisition function to output a generic partial human face or head and combine a partial model with information learned about the sides and front of the head, based on data input to the learning function from the initial tracking function and the data acquisition function, to generate

the learned object model and therefore allow the learning function to more quickly or more accurately learn a final object model see column 5 lines 15- 36.

Allowable Subject Matter

Claims 23 and 30 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Rahmjoo whose telephone number is 571-272-7789. The examiner can normally be reached on 8 AM- 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Rahmjoo

June 15, 2009

/Matthew C Bella/
Supervisory Patent Examiner, Art Unit 2624